



Livescu named AIAA Associate Fellow

January 18, 2017

Daniel Livescu of the Laboratory's Computational Physics and Methods group is a new Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA). Livescu, a scientist and fluid dynamics team leader, is an authority in the field of fluid mechanics and has made significant contributions to the LANL/DOE Stockpile Stewardship mission as a principal investigator for NNSA Defense Science Programs.

Livescu's achievements

The AIAA cited him for “contributions to the fields of turbulence and mixing, and his contributions have spanned a range of technical areas relevant to fundamental fluid dynamics in various aerospace engineering applications. He has explored the physics of mixing between fluids in different densities in a variety of flows, and discovered that mixing at high-density ratios is asymmetric, with the heavy fluid mixing slower than the lighter fluid. Livescu's finding has had consequences for fields such pollutant dispersion, and has led experts to rethink and update models based on single fluid or low-density ratio considerations. Livescu has also made contributions to the understanding of compressible turbulence, as well as proposing novel ways to study post-shock turbulence at higher Reynolds numbers and Mach numbers than thought possible before.”

Livescu received a doctorate in Mechanical and Aerospace Engineering from the University of Buffalo and joined the Lab in 2001. He is a world leader on direct-numerical simulation of turbulence and large-scale flow computations. Livescu has led open science projects, including on Lawrence Livermore National Laboratory's Dawn and Sequoia supercomputers and on LANL's Trinity and Roadrunner. He has performed the largest simulations to date of turbulent flows, approaching or exceeding the parameters achieved in typical experiments. The simulations have revealed new or unexpected physics and helped to develop LANL's turbulence models. Livescu has mentored 12 postdocs and 11 doctoral students (as thesis co-advisor) over the last decade. He is also a Fellow of the American Society of Mechanical Engineers (ASME).

About the American Institute of Aeronautics and Astronautics

AIAA is the world's largest aerospace professional society, serving more than 30,000 members from 88 countries, and 95 corporate members. The grade of Associate Fellow recognizes individuals who have accomplished or been in charge of important engineering or scientific work, or have done original work of outstanding merit, or have otherwise made outstanding contributions to the arts, sciences, or technology

of aeronautics or astronautics. A nominee must be an AIAA Senior Member in good standing, have a minimum of 12 years of professional experience, and be recommended by a minimum of three AIAA members at the Associate Fellow grade or higher. The AIAA will honor Livescu and the other newly elected Associate Fellows at its annual Associate Fellows Recognition Ceremony and Dinner, held in conjunction with the AIAA Science and Technology Forum and Exposition in Grapevine, TX.

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